

## Bridge Inspection

Bridges are an essential part of Cincinnati's transportation network, linking roadways and communities. Timely maintenance is critically important for the safety and welfare of the traveling public. The Department of Transportation and Engineering (DOTE) is the city agency primarily responsible for inspecting, maintaining, and improving the transportation system within the City of Cincinnati. The Bridge Program is the specific program, within DOTE, charged with the responsibility of maintaining the bridges within this transportation system

**In conformance with state law, every bridge in Cincinnati is inspected on an annual basis.** Excepting interstate highway bridges inspected by the Ohio Department of Transportation (ODOT), DOTE Bridge Program personnel annually inspect every bridge in Cincinnati that supports a public roadway or crosses over or under a public roadway. These inspections are performed in accordance with the guidelines specified in the ODOT Bridge Inspection Manual. The objectives of these inspections are to:

1. Locate and determine the extent of any structural weaknesses or damage so that appropriate corrective actions can be taken to ensure public safety.
2. Provide a current information base on the condition of bridges within Cincinnati so that maintenance, repair, and replacement projects can be programmed efficiently.
3. Satisfy state and federal laws and regulations.

The ODOT Bridge Inspection Manual defines a bridge as "Any structure, including supports, of 10 feet or more clear span or 10 feet or more in diameter on, above, or below a highway." During the 2005/2006 inspection season (which began in the winter of 2005 and was concluded in the spring of 2007), DOTE Bridge Program personnel inspected a total of 287 bridges. Two Ft. Washington Way Viaduct bridges, eastbound and westbound Ft. Washington Way over Third Street and Eggleston, were inspected by ODOT. Based upon maintenance responsibility, these 289 bridges are divided into the following eight categories:

1. **City (DOTE) Bridges** (69 bridges): Vehicular and pedestrian bridges owned by the City and maintained by the Department of Transportation and Engineering.
2. **County Bridges** (67 bridges): Vehicular bridges within City limits that support either U.S. Routes, State Routes, or other improved roads which are of general and public utility running into or through Cincinnati. The Department of Transportation and Engineering maintains these bridges for Hamilton County by contractual agreement. Hamilton County funds work performed on these bridges.
3. **Ft. Washington Way Bridges** (5 bridges): Bridges over Ft. Washington Way constructed with the Ft. Washington Way reconstruction project. The Department of Transportation and Engineering shares maintenance responsibility for these bridges with ODOT.

4. **City (Skywalk) Bridges** (21 bridges): Central Business District pedestrian bridges on the skywalk system owned by the City. The Department of Public Services and property owners adjacent to the bridges maintain these bridges. Generally, the Department of Transportation and Engineering is responsible for the major rehabilitation of these bridges.
5. **City (Other) Bridges** (12 bridges): Unique City owned structures located on, over, or under a roadway that technically qualify as bridges. Various City agencies including: Stormwater Management Utility, the Park Board, the Recreation Commission, and Cincinnati Public Schools maintain these bridges.
6. **Kentucky Bridges** (3 bridges): Portions of bridges that span the Ohio River and end in Cincinnati. The Kentucky Transportation Cabinet owns and maintains these bridges.
7. **Railroad Bridges** (62 bridges): Railroad bridges that cross over or under public roadways. CSXT, CIND, RailAmerica, Norfolk-Southern, and SORTA own and maintain these bridges.
8. **Private Bridges** (50 bridges): Privately owned vehicular, pedestrian, and utility bridges that cross over or under public roadways. The applicable private owners maintain these bridges.

Bridges that are part of the Interstate Highway System, including City streets and rail lines over the interstate routes, are not inspected by DOTE Bridge Program personnel. ODOT is responsible for the inspection of these bridges and for the structural maintenance of those that are not railroad bridges.

## Bridge Program Function and Performance Measures

The goal of the Bridge Program is to preserve the structural integrity of all bridges that the Department of Transportation and Engineering (DOTE) maintains. DOTE established the following performance measures to track progress towards accomplishing this objective.

1. Bridge Program personnel will annually inspect all bridges on, over, or under public streets within the City of Cincinnati (excluding Interstate Bridges) and submit this annual bridge condition report, in compliance with the Ohio Revised Code, Section 723.54.
2. Bridge Program personnel will develop, request funding, program, and manage bridge maintenance, repair, and replacement work so as to maintain a Weighted Average Bridge Rating of 6 or better for bridges maintained by the Department of Transportation and Engineering. (A bridge rating of 6 represents a "Satisfactory" condition.)

Both of these performance measures were achieved again this year. During the 2005/2006 bridge inspection season, DOTE personnel (or in the case of two Ft. Washington Way bridges , ODOT personnel) inspected all **289** bridges requiring inspection. The City (DOTE) Bridges weighted average is 7.11 and the County Bridges weighted average is 6.47.

### What is a "Weighted Average Bridge Rating"?

The Weighted Average Bridge Rating is a calculated value used to monitor the performance and communicate the effectiveness of the Bridge Program. The Weighted Average Bridge Rating is an adjusted average of the overall bridge condition ratings that accounts for the importance of the bridge as determined by its size. The weighted average is calculated using a size factor multiplier based on the deck area of the bridge as follows:

Size Factor Multiplier	Deck Area (Square Feet)
1	under 5,000
2	5,000 to 10,000
3	10,000 to 20,000
4	20,000 to 40,000
5	over 40,000

By using the size factor, a bridge with a deck area of over 40,000 square feet will have five times the effect on the weighted average than a bridge with a deck area of under 5,000 square feet. Therefore, the Weighted Average Bridge Rating will be affected more by larger bridges, which are typically more vital to the public and require more funds for maintenance, repair, and replacement.

## **Bridge Conditions**

The individual bridge ratings for all 69 City (DOTE) bridges and all 67 County bridges are shown elsewhere on this site. A summary of the bridge ratings for all 289 inspected bridges is shown in tabular form elsewhere, as well. The Weighted Average Bridge Rating for both City (DOTE) bridges and County bridges from 1987 to 2005 is shown graphically.

As indicated on the graph, the condition of both City (DOTE) bridges and County bridges has shown general improvement over the last eighteen years. The current weighted average bridge rating for City (DOTE) bridges is 7.11. This is the fourteenth consecutive year that the Weighted Average Bridge Rating for City (DOTE) bridges was greater than 6. The current Weighted Average Bridge Rating for County bridges within the city limits is 6.47. This is the thirteenth consecutive year that the Weighted Average Bridge Rating for County bridges was greater than 6. (A bridge rating of 6 represents a "Satisfactory" condition.)

### **Change in Average Bridge Conditions Over the Past Year**

The change in the City (DOTE) bridge rating that occurred this year (from a weighted average of 7.18 to 7.11) was the cumulative result of the following six changes:

- 1) The condition rating of the Brighton Approach Bridge over Central Parkway was lowered from a rating of 7 (good condition) to a rating of 6 (satisfactory condition) due to general age-related deterioration.
- 2) The condition rating of the Celestial Street Pedestrian Bridge over Columbia Parkway was raised from a rating of 6 (satisfactory condition) to a rating of 8 (very good condition) due to repairs made to the bridge as part of the Columbia Parkway Bridge West of Martin Drive bridge replacement project.
- 3) The condition rating on the Elm Street Bridge over Pete Rose Way and Parking Lots was lowered from a rating of 9 (as-built condition) to a rating of 8 (very good condition) due to cracking and spalling of the deck (slab).
- 4) The Elmhurst Avenue Pedestrian Bridge was lowered from a rating of 6 (satisfactory condition) to a rating of 5 (fair condition) due to cracking and delaminations of the concrete that makes up the beam/slab.
- 5) The Power Street Bridge over the West Fork Channel was lowered from a rating of 9 (as-built condition) to a rating of 8 (very good condition) due to cracking in the concrete slab.
- 6) The Railroad (Abandoned) Bridge over I-71 North of Elsinore was added to the City (DOTE) bridge list as a result of an agreement with ODOT.

The change in the County Bridge rating that occurred this year (from a weighted average of 6.53 to 6.47) was the cumulative result of the following two changes:

- 1) The condition rating of the River Road and Hillside Avenue Culvert at Bender was lowered from a rating of 9 (as-built condition) to a rating of 8 (very good condition) due to spalling of the precast concrete segments.
- 2) The condition rating of the eastbound Sixth Street Expressway Bridge over Private Drive West of Freeman was lowered from a rating of 7 (good condition) to a rating of 4 (poor condition) due to the appearance of fatigue cracks at some weld locations. ODOT arranged for the ends of the cracks to be drilled out to prevent the cracks from propagating. Permanent repairs or superstructure replacement will be performed on a future contract.

## **Current Bridge Conditions**

The single bridge rated in "Near Failure" condition is the Old Red Bank Road bridge over CSXT Railroad. The bridge has been closed to vehicular traffic since 1997 and to pedestrian traffic since 2005. Until recently, all parties agreed that this bridge was the maintenance responsibility of CSXT Railroad, and DOTE Bridge Program personnel had been working with CSXT and Duke Energy to have the bridge removed once the attached gas main was relocated. CSXT Railroad notified DOTE in November of 2005 that the ownership of the track rights as well as the bridge had been sold to RailAmerica, Inc. Duke Energy abandoned their gas main in early 2007. DOTE is now working to get a commitment from RailAmerica to remove the bridge.

There is one County bridge rated in "Serious" condition - the Eighth Street Viaduct, which was down-rated during the previous inspection cycle because of continued deterioration of the reinforced concrete piers at the expansion joints. Temporary supports were installed under piers 15, 19 and 27 in late 2005 and early 2006 to allow for continued safe use of the viaduct until the reconstruction project starts. DOTE, through the combined efforts of its own staff members and two directed consultants, has completed plans to partially reconstruct the viaduct. Construction will begin as soon as work agreements are secured with CSXT and Norfolk Southern railroads, both of whom have rail lines running under the viaduct. Additional information on the rehabilitation project can be found in the Major Bridge Projects section of this report.

The remaining eight bridges rated in "Serious" condition are owned and maintained by either CSXT, Norfolk-Southern Railroad, or SORTA. The conditions of these eight bridges have been called to the attention of their owners.

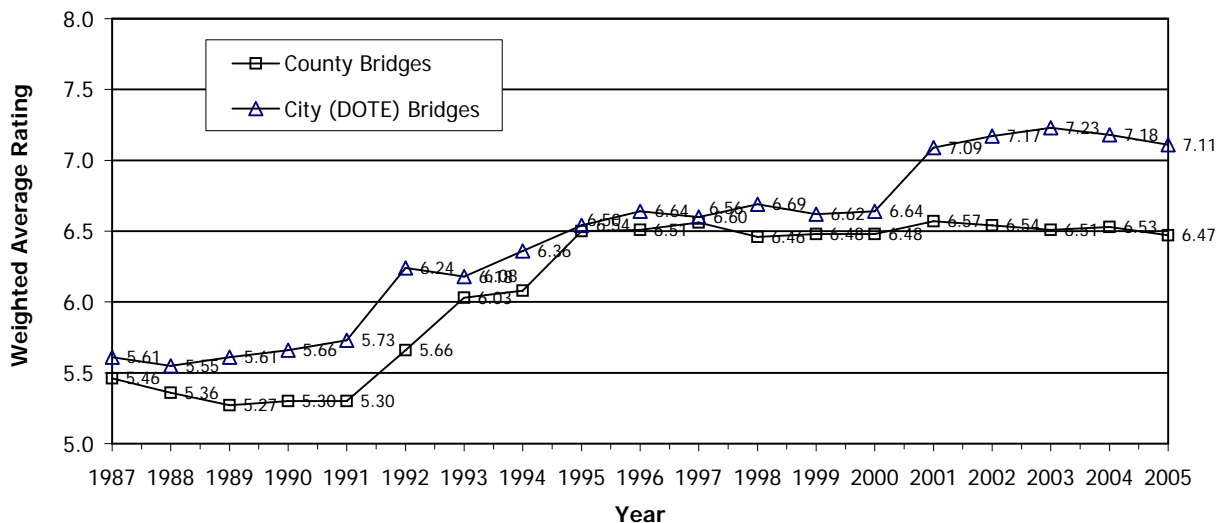
The two City (DOTE) bridges rated in "Poor" condition are the Waldvogel (Sixth Street) Viaduct and the Freeman Avenue Bridge over the Sixth Street Expressway. Structural repairs were made to the Waldvogel Viaduct in late 2006 and early 2007 to allow for continued safe use of the viaduct until its replacement. DOTE, through a directed consultant, is preparing plans to replace the Waldvogel Viaduct. Roadway construction is scheduled for 2010 following the Eighth Street Viaduct partial reconstruction project. Additional information on the replacement project can be

### 2005/2006 Individual Bridge Ratings Summary

Bridge Rating	City (DOTE)	County	Ft. Washington Way	City Skywalk	City Other	Kentucky	Railroad	Private	Total
9 - As-Built	14 ( 16 )	3 ( 4 )	5 ( 5 )	3 ( 3 )	0 ( 0 )	1 ( 1 )	0 ( 0 )	5 ( 5 )	31 ( 34 )
8 - Very Good	10 ( 7 )	12 ( 11 )	0 ( 0 )	6 ( 6 )	0 ( 0 )	0 ( 0 )	2 ( 2 )	16 ( 17 )	46 ( 43 )
7 - Good	30 ( 31 )	20 ( 22 )	0 ( 0 )	8 ( 9 )	7 ( 6 )	0 ( 0 )	4 ( 4 )	12 ( 11 )	81 ( 83 )
6 - Satisfactory	7 ( 8 )	16 ( 16 )	0 ( 0 )	2 ( 5 )	2 ( 3 )	0 ( 0 )	20 ( 20 )	9 ( 9 )	56 ( 61 )
5 - Fair	6 ( 4 )	9 ( 9 )	0 ( 0 )	2 ( 2 )	2 ( 3 )	2 ( 2 )	10 ( 10 )	6 ( 6 )	37 ( 36 )
4 - Poor	2 ( 2 )	6 ( 4 )	0 ( 0 )	0 ( 0 )	1 ( 0 )	0 ( 0 )	17 ( 18 )	2 ( 2 )	28 ( 26 )
3 - Serious	0 ( 0 )	1 ( 1 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	8 ( 7 )	0 ( 0 )	9 ( 8 )
2 - Critical	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )
1 - Near Failure	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 1 )	0 ( 0 )	1 ( 1 )
0 - Failed	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )
Total	69 ( 68 )	67 ( 67 )	5 ( 5 )	21 ( 25 )	12 ( 12 )	3 ( 3 )	62 ( 62 )	50 ( 50 )	289 ( 292 )

Previous ratings in parenthesis

### Weighted Average Bridge Ratings



## City (DOTE) Bridges – Bridge Ratings

	Bridge Name	Structural File Number	Deck Area (SF)	Year Built	Previous Inspection Rating	Current Inspection Rating
1	Baymiller Street Bridge over Central Parkway	3101479	940	1927	6	6
2	Beekman Street Pedestrian Bridge over Elmore	3160068	1,035	1970	7	7
3	Bramble Avenue Bridge over Little Duck Creek	3160556	2,565	1931	8	8
4	Brighton Approach Bridge over Central Parkway	3101533	9,428	1925	7	6
5	Burns Street Ramp over RR West of Eighth Street Viaduct	3136620	5,826	1929	6	6
6	Celestial Street Pedestrian Bridge over Columbia Parkway	3103455	1,320	1938	6	8
7	Central Incinerator Approach Bridge over the Mill Creek	3160610	9,019	1953	7	7
8	Central Parkway over Rapid Transit Tubes South of Hopple	3199924	18,711	1924	6	6
9	Central Parkway over Rapid Transit Tubes - Walnut to Draper	3162753	422,280	1922	6	6
10	Central Parkway Pedestrian Overhead North of Clifton Hills	3111342	1,806	1958	7	7
11	Coliseum Pedestrian Bridge from Taylor Southgate Bridge	3199928	1,000	1995	8	8
12	Coliseum Pedestrian Bridge over Taylor Southgate Bridge	3101355	11,300	1975	7	7
13	Coliseum/Stadium Plaza Overhead over Broadway (Platform A)	3101940	38,525	1975	7	7
14	Dalton Avenue under C.U.T. Approach Drive	3160017	25,248	1931	7	7
15	Dana Avenue Pedestrian Bridge North of Madison	3161455	3,468	1973	7	7
16	Dreman Avenue Bridge over West Fork Channel	3160432	3,693	1999	9	9
17	Elm Street Cable Stayed Pedestrian over FWW East	3106179	2,845	2000	9	9
18	Elm Street Cable Stayed Pedestrian over FWW West	3106063	2,845	2000	9	9
19	Elm Street over Pete Rose Way and Parking Lots	3161978	36,960	2000	9	8
20	Elmhurst Avenue Pedestrian Bridge over Torrence Parkway	3162494	1,155	1950	6	5
21	Erie Avenue Bridge over Duck Creek	3160602	4,136	1900	7	7
22	Erie Avenue Bridge over N & W Railroad	3160823	1,955	2001	7	7
23	Erie Avenue Bridge over Red Bank Road	3160998	12,800	1943	7	7
24	Erie Avenue Bridge over SORTA	3160939	12,800	1943	7	7
25	Este Avenue Extension Culvert	3161412	2,250	1990	8	8
26	Ewart K. Simpkinson Pedestrian Bridge over Ft. Washington Way	3103315	980	1976	7	7
27	Ewart K. Simpkinson Vehicular Bridge over Ft. Washington Way	3103323	1,876	1976	7	7
28	Freeman Avenue Bridge over 6th Street Expressway	3102971	48,785	1966	4	4
29	Gest Street Bridge over CIND Railroad	3161277	2,195	1919	7	7
30	Gest Street Bridge over the Mill Creek	3161749	4,373	1997	8	8
31	Gest Street Ramp East of Linn Street	3161358	3,049	1963	7	7
32	Gest Street Ramp West of Linn Street	3161366	3,049	1963	7	7
33	Hutton Avenue Pedestrian Bridge over Conrail	3199920	1,150	1930	7	7
34	Ida Street Viaduct over Wareham	3160076	14,356	1931	7	7
35	Kenton Street over Florence Ave	3160130	13,275	1998	9	9
36	Lincoln Avenue Bridge over Open Land	3161838	16,500	1953	7	7
37	Lytle Place Drive Tunnel under US 50	3103285	7,954	2000	9	9
38	Madison Road Pedestrian Overhead East of CSX	3161935	773	1959	5	5
39	Madison Road Pedestrian Overhead West of CSX	3161889	774	1959	5	5
40	Main Street Cable Stayed Pedestrian Bridge over FWW East	3106462	2,845	2000	9	9
41	Main Street Cable Stayed Pedestrian Bridge over FWW West	3106403	2,845	2000	9	9
42	Main Street Bridge over Parking Garage	3161900	27,730	2004	9	9
43	Martin Drive Ramp over Columbia Parkway and Open Land	3103609	15,024	1958	6	6
44	Mehring Way Pedestrian Overhead at U.S. Bank Arena	3101371	13,262	1975	7	7
45	Mitchell Avenue over the Mill Creek	3160440	14,347	1959	6	6
46	Monestary Street Bridge over Open Land	3161404	11,324	1984	7	7
47	Park Avenue Bridge over Kemper Lane	3160777	30,680	1917	7	7
48	Pedestrian Tunnel Under Norfolk Southern East of Suspension Bridge	3199923	864	1970	7	7
49	Power Street Bridge over West Fork Channel	3160904	4,799	2001	9	8
50	Race Street over Pete Rose Way and Parking Lots	3162036	20,724	2000	9	9
51	Railroad (Abandoned) Bridge over I-71 North of Elsinore	3106748	5,440		-	5
52	Roe Street Bridge over Little Duck Creek	3161005	1,692	1930	7	7
53	Rosslyn Drive Bridge over Duck Creek	3162338	2,820	1943	7	7
54	Second Street Connector from Clay Wade Bailey (Ramp D)	3160661	25,617	2001	9	9
55	Second Street over Transit Center - East End	3160866	61,812	2001	5	5
56	Second Street over Transit Center – Elm to Main Streets	3160696	178,641	2001	8	8
57	Second Street over Transit Center - West Approach	3160688	27,302	2001	9	9
58	Settle Avenue Bridge over Little Duck Creek	3161188	1,888	1996	8	8
59	Sixth Street Expressway Pedestrian Bridge West of Harriet	3102831	1,251	1965	7	7
60	Sonoma Court Culvert	3162753	1,474	2004	9	9
61	Southside Avenue Bridge over Conrail/CSX	3161528	5,263	1992	8	8
62	Springlawn Avenue Bridge over Branch of Ludlow Run	3161285	434	1925	5	5
63	Stillwell Road Bridge over Amberley Creek North of Summit	3161331	840	1954	7	7
64	Victory Parkway Pedestrian Overhead East of I-71	3161374	2,090	1972	7	7
65	Vine Street Bridge over Parking Garage	3161781	22,214	2003	9	9
66	Waldvogel Viaduct	3102785	139,068	1951	4	4
67	Walnut Street Bridge over Parking Garage	3162877	22,185	2004	9	9
68	West Eighth Street Bridge over Fairbanks	3162702	8,568	1955	7	7
69	West Eighth Street Bridge over Woodlawn	3162656	4,704	1955	7	7
	<b>Total Deck Area\Straight Avg Year Built\Weighted Avgs</b>		<b>1,410,746</b>	<b>1967</b>	<b>7.18</b>	<b>7.11</b>



## County Bridges – Bridge Ratings

	Bridge Name	Structural File Number	Deck Area (sq. ft.)	Year Built	Previous Inspection Rating	Current Inspection Rating
1	Anthony Wayne Avenue Bridge over the Mill Creek	3136388	6,452	1992	8	8
2	Beechmont Avenue Bridge over the Little Miami River	3102076	33,475	1954	6	6
3	Beechmont Avenue Culvert at Berkshire Lane	3111318	870	1907	5	5
4	Beechmont Avenue Viaduct over Eastern Avenue and Railroad	3102068	42,210	1994	6	6
5	Beekman Street Bridge over West Fork Channel	3136426	3,256	1912	8	8
6	Berkshire Lane Culvert 400 Feet North of Beechmont	3136450	1,767	1986	7	7
7	Center Hill Avenue Bridge over the Mill Creek	3136442	5,775	1929	5	5
8	Clay Wade Bailey Approach Bridge	3102246	76,410	1972	5	5
9	Clifton Avenue Bridge over the Mill Creek	3136353	6,250	1935	5	5
10	Columbia Parkway Bridge over Beechmont Avenue	3103692	17,399	1962	7	7
11	Columbia Parkway Bridge over Collins Avenue	3103668	6,440	1936	7	7
12	Columbia Parkway Bridge over Heekin Avenue	3103757	13,722	1962	6	6
13	Columbia Parkway Bridge over Linwood Avenue	3103722	15,275	1962	5	5
14	Columbia Parkway Bridge East of Kemper Lane	3103633	20,048	1938	7	7
15	Columbia Parkway Bridge over Ramp S. of Leonard Street	3103781	17,692	1962	6	6
16	Columbia Parkway Bridge West of Martin Drive Approach	3103579	3,800	1972	8	8
17	Columbia Parkway Bridge Immediate West of Martin Drive	3103587	28,950	2005	8	8
18	Columbia Parkway Viaduct over Eggleston	3103390	119,448	1938	7	7
19	East Fork Avenue Bridge over Little Duck Creek	3136574	1,512	1952	5	5
20	Eighth Street Bridge over Railroads W of Eighth Street Viaduct	3136604	7,476	1929	5	5
21	Eighth Street Viaduct over the Mill Creek, Evans and Railroad	3136582	190,610	1929	3	3
22	Ft. Washington Way Viaduct (East Bound)	3103412	82,246	2001	9	9
23	Ft. Washington Way Viaduct (West Bound)	3103366	78,787	2001	8	8
24	Galbraith Road Bridge over Anthony Wayne Avenue	3136612	20,808	1949	6	6
25	Gilbert Avenue Bridge over Eggleston	3100294	12,107	1985	8	8
26	Glenway Avenue over Chessie	3111547	9,407	1977	7	7
27	Hopple Street Viaduct	3136337	115,560	1916	7	7
28	Kellogg Avenue Bridge over the Little Miami River	3105768	32,549	1972	6	6
29	Kellogg Avenue Culvert North of Apple Hill	3105792	1,424	1900	6	6
30	Kennedy Avenue Bridge over Conrail	3136671	9,723	1933	4	4
31	Ludlow Avenue Viaduct North of William Dooley By-Pass	3111385	90,324	1994	8	8
32	Madison Road Bridge over Duck Creek East of Ridge	3136728	2,352	1929	8	8
33	Marburg Avenue over N & W Railroad	3136744	6,156	1932	4	4
34	McMillan Street Bridge over Reading Road	3101231	12,912	1937	7	7
35	Mehring Way Bridge over Broadway	3105652	3,285	1970	7	7
36	Mehring Way Over Pedestrian Tunnel E. of Suspension Bridge	3105636	1,220	1970	7	7
37	Montgomery Road Arch over SORTA	3100871	2,390	1930	5	5
38	North Bend Road over Kirby Road	3136795	6,776	1951	6	6
39	North Bend Road over the Mill Creek	3137139	8,404	1995	9	9
40	Norwood Lateral Bridge over Paddock Road	3113841	16,869	1959	7	7
41	Norwood Lateral Bridge over Reading Road	3113884	15,470	1972	7	7
42	Plainville Road Arch over Little Duck Creek	3136817	1,188	1915	6	6
43	Red Bank Expressway Culvert over Deerfield Channel	3136841	3,570	1969	6	6
44	Red Bank Expressway Culvert over Deerfield Channel at Madison	3136868	28,000	1970	7	7
45	River Road and Hillside Ave. Culvert at Bender	3102777	8,064	2000	9	8
46	River Road Bridge over Muddy Creek	3102734	15,974	1955	7	7
47	Salem Avenue Ramp over Kellogg Avenue	3105776	4,655	1972	6	6
48	Seventh Street Approach Bridge to Gilbert Avenue Viaduct	3100766	15,148	1950	7	7
49	Seymour Avenue Bridge over the Mill Creek	3136922	8,326	1994	8	8
50	Sixth Street Expressway Eastbound over Gest Street	3103129	11,726	1963	6	6
51	Sixth Street Expressway Westbound over Gest Street	3103099	15,254	1963	6	6
52	Sixth Street Expressway Eastbound over Harriett Street	3102882	7,843	1963	4	4
53	Sixth Street Expressway Westbound over Harriett Street	3102874	9,819	1963	4	4
54	Sixth Street Expressway Eastbound over Linn Street & Railroads	3103064	40,925	1963	6	6
55	Sixth Street Expressway Westbound over Linn Street & Railroads	3103005	41,499	1963	7	7
56	Sixth Street Expressway Eastbound over Mill Creek & Railroads	3102815	41,880	1963	7	7
57	Sixth Street Expressway Westbound over Mill Creek & Railroads	3102807	41,960	1963	6	6
58	Sixth St. Expressway Eastbound over Private Drive W of Freeman	3102920	14,182	1963	7	4
59	Sixth St. Expressway Westbound over Private Drive W of Freeman	3102912	14,606	1963	7	4
60	Spring Grove Avenue Bridge over Mill Creek East of Kings Run	3137074	13,448	1993	7	7
61	Spring Grove Avenue Bridge over Mill Creek South of Colerain	3137031	17,365	1970	6	6
62	Vine Street Bridge over the Mill Creek	3100529	17,506	1991	8	8
63	West Fork Road Bridge over Tributary of West Fork Channel	3137155	2,755	2000	8	8
64	West Fork Road Bridge over West Fork Channel - 2nd West of Montana	3137147	3,143	2000	9	9
65	West Fork Road Bridge over West Fork Channel at Montana	3137090	3,476	1928	7	7
66	Western Hills Viaduct	3137082	221,920	1931	5	5
67	Wooster Road Bridge over Duck Creek	3137112	5,816	1961	7	7
	<b>Total Deck Area\Straight Avg Year Built\Weighted Avgs</b>		<b>1,757,654</b>	<b>1960</b>	<b>6.53</b>	<b>6.47</b>

## **Investment in Our Bridge Infrastructure**

### **City (DOTE) Bridges**

Maintenance, repair, and replacement of City (DOTE) bridges is funded with both operating and capital funds. City funds are leveraged, when possible, with state and federal funds.

DOTE's goal is to maintain a weighted average bridge rating of 6, "Satisfactory" condition, or better. The Smale Commission Report recommended the annual investment of \$1,000,000 in Operating funds and \$2,800,000 in Capital funds to maintain the city's bridge infrastructure. This recommendation was in 1988 dollars to maintain a deck area of approximately 1,000,000 square feet. However, because 400,000 square feet of new bridge deck area has been added, mostly as a result of Fort Washington Way and Riverfront development, the current weighted average bridge rating for City bridges has climbed to 7.11. Current Operating and Capital funding levels for City bridges is \$171,000 and \$1,100,000 respectively (excluding funding for the Waldvogel Viaduct project). At the current funding level, a general decline in the condition of the bridges is expected. These funding levels will need to be substantially increased to keep the weighted average bridge ratings at their current levels.

### **County Bridges**

By contractual agreement with Hamilton County, the City of Cincinnati receives \$1,000,000 annually to inspect and maintain bridges that support either U.S. Routes, State Routes, or other improved roads which are of general and public utility running into or through Cincinnati. As with City funds, Hamilton County funds are leveraged, when possible, with state and federal funds.

### **Leveraged Funding Summary**

DOTE continues to aggressively pursue outside funding sources to maintain Cincinnati's public infrastructure. Successful leveraging of outside funds is imperative to maintain and improve the condition of Cincinnati's bridges.

The following tables indicate the amount of outside funding that the City has obtained in recent years for the Bridge Program. A significant percentage of the obtained leveraged funding was for County bridges. Because of the generally higher traffic volumes and because approximately half of Hamilton County bridges support either U.S. Routes or State Routes, the funds received from Hamilton County are more able to be successfully leveraged with outside funding sources.

### 1993-Present Leveraged Funding Summary – City (DOTE) Bridge Program

Year	Project	Contract Bid Cost	% Federal	% State	% SCIP	% Local	Leveraged	Local
1993	Sixth Street Expressway (2 bridges)	\$1,555,990	75%	25%			\$1,555,990	\$0
1996	Gest Street over the Mill Creek	\$839,550			80%	20%	\$671,640	\$167,910
1997	Kenton Street over Florence	\$1,589,170			80%	20%	\$1,271,336	\$317,834
1998	Dreman Ave. Bridge over West Fork Channel	\$1,887,370			70%	30%	\$1,321,159	\$566,211
1998	Gest Street over CIND Railroad	\$552,000			55%	45%	\$303,600	\$248,400
2000	Erie Avenue Bridge over N & W Railroad	\$731,620			68%	32%	\$498,968	\$232,652
2003	Martin Drive Ramp over Columbia Parkway (Bridge Work Only)	\$162,333		100%		0%	\$162,333	\$0
2003	Celestial Street Pedestrian Bridge (Bridge Work Only)	\$172,727		57%		43%	\$98,477	\$74,250
2003	Roadway and Aesthetic Improvements with Columbia Parkway Bridge Project	\$2,201,695		81%		19%	\$1,781,337	\$420,358
2006	Freeman Avenue over 6 <sup>th</sup> Street Expressway with 6 <sup>th</sup> Street Expressway Project	\$103,702		100%		0%	\$103,702	\$0
	Total Costs	\$9,796,157					\$7,768,542	\$2,027,615

### 1993-Present Leveraged Funding Summary – County Bridge Program

	Project	Contract Bid Cost	% Federal	% State	% SCIP	% Local	Leveraged	Local
1993	Columbia Parkway (2 bridges)	\$1,497,545	70%	30%			\$1,497,545	\$0
1993	River Road over Muddy Creek	\$759,740	75%	25%			\$759,740	\$0
1993	Sixth Street Expressway (10 bridges)	\$4,130,761	75%	25%			\$4,130,761	\$0
1993	Spring Grove over Mill Creek	\$2,065,260			80%	20%	\$1,652,208	\$413,052
1994	Seymour Avenue over Mill Creek	\$1,945,780	80%		20%		\$1,945,780	\$0
1994	Beechmont Avenue Viaduct	\$5,067,402	75%	25%			\$5,067,402	\$0
1995	Beekman Avenue over West Fork	\$967,222			80%	20%	\$773,778	\$193,444
1995	North Bend Road over Mill Creek	\$1,302,647	80%		20%		\$1,302,647	\$0
1993	Ludlow Avenue Viaduct	\$9,229,975	75%	25%			\$9,229,975	\$0
1997	Columbia Parkway Viaduct	\$10,900,000		100%			\$10,900,000	\$0
1999	Fort Washington Way Viaduct (3rd St. Viaduct)	\$27,208,420		100%			\$27,208,420	\$0
1999	West Fork Bridges over West Fork Channel	\$1,555,310			70%	30%	\$1,088,717	\$466,593
1999	River Road/Hillside Culvert at Bender	\$2,198,465		100%			\$2,198,465	\$0
2001	Kellogg and Salem Avenue Bridges	\$397,097		100%			\$397,097	\$0
2002	Western Hills Viaduct - West Plaza Repairs	\$161,296			90%	10%	\$145,166	\$16,130
2003	Columbia Parkway Bridge West of Martin Drive Ramp (Bridge Work Only)	\$3,599,019		100%			\$3,599,019	\$0
2004	Clay Wade Bailey Approach	\$1,400,000		100%			\$1,400,000	\$0
2005	Norwood Lateral over Paddock and Reading Road Bridges	\$396,755		100%			\$396,755	\$0
2006	6th Street Expressway Project (10 Bridges)	\$631,560		100%			\$631,560	\$0
2007	Columbia Parkway over Beechmont, Linwood, Heekin & Ramp to Eastern – Deck Treatments (Bridge Work Only)	\$73,830		100%			\$73,830	\$0
	Total Costs	\$75,488,084					\$74,398,865	\$1,089,219

## **2006 Bridge Construction Project Summary**

The following summarizes construction activities on City (DOTE) and County bridges that occurred in 2006 or will occur in 2007. Except as noted, DOTE staff performed plan development and construction management for these bridge projects.

### **City (DOTE) Bridge Construction Projects**

#### **Second Street over Transit Center – Joint Repairs** (City Bridge in Central Riverfront District)

This project consisted of upgrading the bridge expansion joints over the Transit Center to prevent leakage into the Transit Center. The work was performed as part of Fort Washington Way Contract #28 and was completed in early 2006. The accepted contract bid price for this work was \$262,000 and was financed with both City operating funds and City CIP bridge funds.

#### **Elm & Main Street Cable Stayed Pedestrian Bridges – Bolted Connection Repairs** (City Bridges over Fort Washington Way)

This project consisted of tightening loose bolted connections and performing repairs to prevent future loosening. The work was performed as part of Fort Washington Way Contract #28 and was completed in early 2006. The accepted contract bid price for this work was \$25,872 and was financed with both City operating funds and City CIP bridge funds.

#### **City Bridge Railing Repairs** (Various City Bridges)

This project consisted of making repairs to pedestrian railing, handrails and approach guardrail to the Central Incinerator Approach Bridge over the Mill Creek, the Dreman Avenue and Powers Street Bridges over the West Fork Channel, the Elm Street Bridge over Pete Rose Way and Parking Lots, and the Hutton Street Pedestrian Bridge over Conrail. Work was completed in April of 2006. The accepted contract bid price for this work was \$49,219 and was financed with City CIP bridge funds.

#### **Freeman Avenue Bridge over Sixth Street Expressway, In-Depth Inspection and Repairs** (City Bridge in Queensgate)

An in-depth inspection of all visible welds was made by a consultant under DOTE's direction in early 2006 to identify the location of fatigue cracks. Remediation measures to hinder crack propagation were performed under an ODOT contract at the end of 2006.

#### **Broadway Pedestrian Plaza Overhead at U.S. Bank Arena and Great American Ballpark – Bird Exclusion Netting** (City Bridge in the Central Riverfront District)

This project consisted of installing bird exclusion netting and bird slides beneath the deck and on top of existing light fixtures to prevent birds from roosting or landing on the structural steel or the existing light fixtures. This project was undertaken at the behest of the Health Department due to concerns about the possible danger to the public from bird droppings.

Construction began in August 2006 and was completed in November of 2006. The accepted contract bid price for the project was \$73,200 and was financed with City CIP bridge funds.

**Waldvogel Viaduct Structural Repairs Contract** (City Bridge in Lower Price Hill)

This project consisted of cleaning, repairing and painting structural steel members, repairing deteriorated sections of the wearing surface and sidewalks on the bridge, replacing damaged or nonfunctioning drainage members and making other repairs to the Viaduct in order to keep the Viaduct operational until it can be replaced. Construction began in the fall of 2006 and was completed in early 2007. The accepted contract bid price for this work was \$687,300 and was financed with both City operating funds and City CIP bridge funds. Additional information on the future replacement project can be found in the Major Bridge Projects section of this report.

**Rosa Parks (Vine Street) Grating Repairs** (City Bridge in Central Riverfront District)

This project consists of replacing the steel ventilation grating on the wearing surface of the Vine Street Bridge over Parking Garage. Work is scheduled for the summer of 2007. Replacement is needed due to poor initial fabrication of the grating. This work will be financed primarily with money retained from the original contract due to lack of satisfaction with the original work.

**Lincoln Avenue Bridge Deck Overlay** (City Bridge in Walnut Hills)

This project consists of concrete overlaying the existing bridge deck, reconstructing portions of the backwalls, making expansion joint repairs, and painting steel members. Plans are complete and construction is scheduled for the summer of 2007 following the availability of 2007 CIP funds. This project will be financed with City CIP bridge funds.

**City Bridge Maintenance Contract** (Various City Bridges)

This project will consist of numerous, sundry repairs to various city bridges spread across the City. The list of repair items is currently being developed. Work is scheduled for summer and fall of 2007 and will be financed with City operating funds.

**Burns Street Ramp Bridge Replacement** (City Bridge in Lower Price Hill)

See Major Bridge Projects for information on this project.

**County Bridge Construction Projects****Eighth Street Viaduct Shoring** (County Bridge in Queensgate and Lower Price Hill)

Due to continued deterioration of the split piers located under the expansion joints, the Viaduct's condition rating was lowered from a 4 (Poor condition) to a 3 (Serious condition) during the previous inspection cycle. Shoring plans for piers 15, 19, and 27 were prepared by a consultant under DOTE's direction and installation was completed in early 2006. The shoring was needed to maintain the Viaduct in a safe condition until the partial reconstruction project occurs. Traffic on the viaduct was not affected by the work. The accepted contract bid price for the project was \$413,333 and was financed using County MRF bridge funds. Additional information on the future partial reconstruction project can be found in the Major Bridge Projects section of this report.

**Montgomery Road Arch – Railing Repair** (County Bridge in Pleasant Ridge)

This project consisted of making repairs to the concrete railing and sidewalk that were deteriorated due to their age and were further damaged by vehicle impact. The

accepted contract bid price for this work was \$45,022 and was financed with County MRF bridge funds. Construction was completed in early 2006.

**Norwood Lateral Bridge over Paddock Road  
Norwood Lateral Bridge over Reading Road**

(County Bridges in Bond Hill)

This ODOT design-build project resurfaced the entire length of the Norwood Lateral. Roadway sections of the project were resurfaced with asphalt while the bridge sections, including the bridges over Paddock Road and Reading Road, were overlayed with new concrete wearing surfaces. The project also included sealing concrete surfaces on both bridges and replacing the expansion joint glands on the Paddock Road Bridge. Construction began in the spring of 2006 and was completed in the fall of 2006. Work was performed mostly during nights and weekends to minimize traffic impacts. Work on this project was financed by ODOT.

**Sixth Street Expressway East Bound over Mill Creek and Railroads  
Sixth Street Expressway West Bound over Mill Creek and Railroads  
Sixth Street Expressway East Bound over Harriett Street  
Sixth Street Expressway West Bound over Harriett Street  
Sixth Street Expressway East Bound over Private Drive West of Freeman  
Sixth Street Expressway West Bound over Private Drive West of Freeman  
Sixth Street Expressway East Bound over Linn Street and Railroad  
Sixth Street Expressway West Bound over Linn Street and Railroad  
Sixth Street Expressway East Bound over Gest Street  
Sixth Street Expressway West Bound over Gest Street**

(County Bridges in Queensgate)

ODOT performed numerous, sundry repairs to these structures during the summer and fall of 2006. Work included: placing asphalt deck overlays, cleaning bridge drainage systems, repairing bridge pressure relief joints, making weld inspections and repairs and sealing bridge decks with gravity fed resin. All work on this project was financed by ODOT.

**County Bridge (Western Hills Viaduct) Maintenance Contract** (County Bridge in Camp Washington/Queensgate)

This project is currently under construction. The expansion joints to the ramps to and from southbound I-75 were replaced and lower deck was ground and repaved in the fall of 2006. Impact attenuator and guardrail repairs were also made in the fall of 2006. Ongoing work includes installing supplemental supports under two deteriorated beams and cleaning and painting selected steel members. The accepted contract bid price was \$777,600 and is being financed using County MRF bridge funds.

**Western Hills Viaduct Safety Improvements** (County Bridge in South Fairmont)

This project consists of removing and replacing guardrail treatments that no longer meet current design criteria at State Avenue under the west end of the Western Hills Viaduct. Work is scheduled to take place in the fall 2007 and will be financed using County MRF bridge funds.

**Eighth Street Viaduct Reconstruction and Eighth Street Bridge Replacement**  
(County Bridges in Queensgate and Lower Price Hill)

See Major Bridge Projects for information on this project.

## **Major Bridge Projects**

### **Eighth Street Viaduct Partial Reconstruction including Replacement of the Eighth Street Bridge and the Burns Street Ramp** (County Bridge in Queensgate and Lower Price Hill)

The Eighth Street Viaduct is rated in "Serious" condition (condition rating of 3). Steel shoring has been installed under piers 15, 19 and 27 to maintain safe operation of the viaduct until the partial reconstruction project occurs. This project also includes replacing the Eighth Street Bridge west of the viaduct and the Burns Street Ramp, which is a City (DOT) bridge adjacent to the viaduct. DOT, through the combined efforts of its own staff members and two directed consultants, has completed plan development. Construction will begin as soon as work agreements are secured with CSXT and Norfolk Southern Railroad, both of whom have rail lines under the viaduct. The full project will take two years to complete. During the first construction season, 22 of the 78 existing concrete piers that support the viaduct deck will be replaced and the superstructures to the Eighth Street and the Burns Street Ramp bridges will be replaced. It will be necessary to close the viaduct during this phase of the work. During the second construction season, the viaduct deck will be fully resurfaced and the walks, railings, lighting and drainage features will be replaced. One lane of traffic in each direction and pedestrian access across the viaduct will be maintained during this phase of the work. The estimated construction cost for the project is \$25 million. The City has secured \$15 million in state and federal funding from the Local Major Bridge program and OKI and \$4 million from OPWC. The remaining local match will be funded from a combination of County MRF Bridge funds, City CIP Eighth Street Viaduct Rehabilitation funds and City CIP Bridge funds.

### **Waldvogel Memorial Viaduct Replacement** (City Bridge in Lower Price Hill)

The Waldvogel Viaduct is rated in "Poor" condition (condition rating of 4) but is safe for its posted loading of 16 tons. This is 40% of the legal load limit. The viaduct has been posted at this load limit since 1993. DOT continues to perform repairs to the structure as needed to keep it operational for passenger vehicles and buses. Structural repairs were completed in early 2006 to maintain safe operation of the viaduct at its posted limit until it is replaced. As a combination of Federal discretionary funds, ODOT Local Major Bridge project funds and OKI funds, DOT has secured \$29.5 million or 80% of the estimated \$49 million right-of-way and construction costs for the replacement project. DOT will continue its efforts to secure additional outside funding both for construction and for the necessary property acquisitions. Replacement plans are currently being prepared by a consultant under DOT's direction. The proposed project was presented to the local community at a series of three community meetings and one open house meeting in spring, 2005. The proposed project was well received. The project will replace the existing, deteriorated, half-mile long structure with a combination of roadway on grade and five new, smaller ramp bridges. Roadway construction is scheduled for 2010, following Eighth Street Viaduct project. Construction is expected to last two years. Preliminary railroad and utility relocation work could begin as early as 2008.

### **Western Hills Viaduct Rehab/Replacement** (County Bridge in South Fairmount, Camp Washington and Queensgate)

The Western Hills Viaduct is currently rated in "Fair" condition (condition rating of 5). Due to the proximity of the viaduct to I-75, the configuration of the viaduct may well be impacted by ODOT's proposed I-75 projects. DOT will continue to work with ODOT as the I-75 studies progress to see to what extent the final alignment of I-75 will impact the viaduct.

Due to the size of the structure, it is expected that all rehabilitation/replacement options will well exceed \$50 million. A more precise cost estimate can only be established after a project scope has been defined. Because of this high cost, state and/or federal funds will be needed to complete the project. This will extend the time required for plan development. The earliest construction could start is 2012 following the Waldvogel Viaduct Replacement project.

**Central Parkway over Rapid Transit Tubes – Walnut to Draper**

**Central Parkway over Rapid Transit Tubes – South of Hopple**

(City Bridges in the CBD, Over the Rhine, the West End, CUF, and Camp Washington)

These two unused subway tube structures, which were built in 1924 and have a combined length of 2.5 miles, are rated in "Satisfactory" condition (condition rating of 6). A feasibility study by transit experts to evaluate using the tubes for their intended purpose (light rail) is presently underway. If no future beneficial use is foreseen for the tubes, consideration should be given to filling the tubes in order to end the ongoing maintenance requirement. The cost to fill the tubes with a controlled density cementitious fill material is estimated to be \$20 million.



## City (DOTE) Bridges – Six-Year Bridge Plan

Approx. Carry-Over Funds	New Funds C=Capital O=Operating	Program Expenses						
		Projects by Year Contract Awarded	Rating	Deck Area (SF)	Estimated Total Local Project Cost	Const. Split <sup>1</sup> % Local Funds	% Lev. Funds	Estimated Remaining Funds
<b>2007</b>								
<b>\$1,200,000</b>	<b>\$1,100,000 C</b>	Bridge Inspection and Program Management	N/A	N/A	\$200,000	100%	0%	
	<b>\$171,000 O</b>	TROD Capital Bridge Work	Various	Various	\$50,000	100%	0%	
		Second Street Railing Repair	8	178,641	\$0	0%	100%	
		Rosa Parks (Vine Street) Grating Repairs	9	2,214	\$10,000	100%	0%	
		Burns Street Ramp Replacement <sup>2</sup>	6	5,826	\$1,500,000	20%	80%	
		Baymiller St. Ped. Bridge – Concrete Repairs	6	940	\$200,000	100%	0%	
		Lincoln Avenue Bridge – Concrete Overlay, Painting, and Other Misc. Repairs	7	16,500	\$1,000,000	100%	0%	
		City Bridge Maintenance Contract (Freeman)	Various	Various	\$200,000	100%	0%	
		<b>TOTAL</b>			<b>\$1,960,000</b>			<b>\$511,000</b>
<b>2008</b>								
<b>\$511,000</b>	<b>\$1,100,000 C</b>	Bridge Inspection and Program Management	N/A	N/A	\$200,000	100%	0%	
	<b>\$171,000 O</b>	TROD Capital Bridge Work	Various	Various	\$50,000	100%	0%	
		Stillwell Rd. Bridge – Superstructure Replace.	7	840	\$400,000	100%	0%	
		Second St. over T.C., East – In-depth Insp.	5	61,812	\$100,000	100%	0%	
		City Bridge Maintenance Contract	Various	Various	\$250,000	100%	0%	
		<b>TOTAL</b>			<b>\$1,000,000</b>			<b>\$782,000</b>
<b>2009</b>								
<b>\$782,000</b>	<b>\$1,500,000 C</b>	Bridge Inspection and Program Management	N/A	N/A	\$200,000	100%	0%	
	<b>\$500,000 O</b>	TROD Capital Bridge Work	Various	Various	\$50,000	100%	0%	
		Park Ave. Br. – Conc. Overlay & Railing Repair	7	30,680	\$1,500,000	100%	0%	
		City Bridge Maintenance Contract	Various	Various	\$250,000	100%	0%	
		<b>TOTAL</b>			<b>\$2,000,000</b>			<b>\$782,000</b>
<b>2010</b>								
<b>\$782,000</b>	<b>\$1,500,000 C</b>	Bridge Inspection and Program Management	N/A	N/A	\$200,000	100%	0%	
	<b>\$500,000 O</b>	TROD Capital Bridge Work	Various	Various	\$50,000	100%	0%	
		Ida St. Br. – Conc. Overlay & Railing Repair	7	13,192	\$800,000	100%	0%	
		Springlawn Avenue Bridge – Replacement	5	434	\$400,000	100%	0%	
		Martin Dr. Ramp – Steel Repairs & Painting	6	15,024	\$500,000	100%	0%	
		City Bridge Maintenance Contract	Various	Various	\$250,000	100%	0%	
		Waldvogel Viad. (\$49,000,000 Ind. Proj.) <sup>3</sup>	4	139,068	\$16,800,000 <sup>3</sup>	20%	80%	
		<b>TOTAL</b>			<b>\$2,200,000</b>			<b>\$582,000</b>
<b>2011</b>								
<b>\$582,000</b>	<b>\$1,500,000 C</b>	Bridge Inspection and Program Management	N/A	N/A	\$200,000	100%	0%	
	<b>\$500,000 O</b>	TROD Capital Bridge Work	Various	Various	\$50,000	100%	0%	
		Central Incinerator Bridge – Concrete Overlay	7	13,192	\$600,000	100%	0%	
		Bramble Ave. Bridge – Concrete Overlay.	8	2,565	\$200,000	100%	0%	
		Southside Ave. Bridge - Concrete Overlay	8	5,263	\$300,000	100%	0%	
		Monetary St. Bridge - Concrete Overlay	7	11,324	\$600,000	100%	0%	
		City Bridge Maintenance Contract	Various	Various	\$250,000	100%	0%	
		<b>TOTAL</b>			<b>\$2,200,000</b>			<b>\$382,000</b>
<b>2012</b>								
<b>\$382,000</b>	<b>\$1,500,000 C</b>	Bridge Inspection and Program Management	N/A	N/A	\$200,000	100%	0%	
	<b>\$500,000 O</b>	TROD Capital Bridge Work	Various	Various	\$50,000	100%	0%	
		Freeman & Pedestrian Bridges over Sixth Street Expressway - Rehabilitation	7,7	50,036	\$1,000,000	100%	0%	
		Rosslyn Dr. Bridge – Deck Replacement	7	2,820	\$400,000	100%	0%	
		City Bridge Maintenance Contract	Various	Various	\$250,000	100%	0%	
		<b>TOTAL</b>			<b>\$1,900,000</b>			<b>\$482,000</b>

- <sup>1</sup> Additional leveraged funds will be pursued and will be used to supplement local funds as secured. Only those leveraged funds actually secured at the present time are listed and are being used for budgeting purposes.
- <sup>2</sup> Only \$300,000 of this amount is being financed from the City Bridge Fund. The remaining amount of \$1,200,000 is being financed from a project specific fund (9803070) ear marked specifically for the Burns Street Ramp project and other work associated with the Eighth Street Viaduct Rehabilitation project that is in addition to that work that will be funded by ODOT or Hamilton County.
- <sup>3</sup> This value of \$16,800,000 is not included in the yearly summation because it is being financed from project specific funds outside the normal bridge program due to the size of the project. Additional information on this replacement project can be found in the Major Bridge Projects section of this report.

The projects are grouped by the year of expected bid. This plan is flexible and will be revised as necessary if future bridge inspections reveal unexpected changes in the condition of any bridge, if anticipated bridge funding amounts change, if unexpected leveraged funding sources become available or are withdrawn, if the timing of any bridge project requires adjustment to coordinate with other infrastructure improvement or development projects, or if City Council or the City Administration redirect priorities. The estimated project costs are preliminary and are only intended to establish basic funding needs and are not considered engineer's estimates. Bridge conditions will be continually monitored during the six-year period and the plan will be adjusted as needed to best maintain the bridge infrastructure.

Some possible projects that may need to be moved forward or may need to be included in the City Bridge Maintenance Contracts include:

- 1) Elmhurst Ave. Pedestrian Bridge – Concrete Patching and Sealing
- 2) Madison Road Pedestrian Bridges – Deck Replacements
- 3) Gest St. Bridge over CIND Railroad – Epoxy Deck Overlay
- 4) Hutton Street Pedestrian Bridge – Concrete Patching, Sealing and General Repairs
- 5) In-depth Inspection of Fracture Critical Members or other In-depth Inspections

The funds programmed for the City Bridge Maintenance Contracts may also be used, wholly or in part, to support other projects listed in the six-year plan whose expenses exceed the preliminary estimations listed in the six-year plan.

## County Bridges – Six-Year Bridge Plan

Approx. Carry-Over Funds	New Funds	Program Expenses						
		Projects by Year Contract Awarded	Rating	Deck Area (SF)	Estimated Total Local Project Cost	Const. Split <sup>1</sup>		Estim. Remaining Funds
						% Local Funds	% Lev. Funds	
2007								
\$5,000,000	\$2,000,000	Bridge Inspection and Program Management	N/A	N/A	\$100,000	100%	0%	
	MRF	TROD Bridge Work	Various	Various	\$100,000	100%	0%	
		Eighth St. Viaduct – Rehabilitation <sup>3</sup>	3	190,610	\$4,500,000	20%	80%	
		Eighth St. Viaduct – Construction Management	3	190,610	\$200,000	100%	0%	
		Western Hills Via. – Safety Improvements	5	221,920	\$300,000	100%	0%	
		Columbia Pkwy Bridges, East End (ODOT Proj.)	Various	Various	\$0	0%	100%	
		Underwater Inspections	Various	Various	\$20,000	100%	0%	
		TOTAL			\$5,220,000			\$1,780,000
2008								
\$1,780,000	\$1,000,000	Bridge Inspection and Program Management	N/A	N/A	\$100,000	100%	0%	
	MRF	TROD Bridge Work	Various	Various	\$100,000	100%	0%	
		Eighth St. Viaduct – Construction Management	3	190,610	\$200,000	100%	0%	
		County Bridge Maintenance Contract	Various	Various	\$200,000	100%	0%	
		Western Hills Viaduct – Inspection <sup>2</sup>	5	221,920	\$500,000	100%	0%	
		TOTAL			\$1,100,000			\$1,680,000
2009								
\$1,680,000	\$1,000,000	Bridge Inspection and Program Management	N/A	N/A	\$100,000	100%	0%	
	MRF	TROD Bridge Work	Various	Various	\$100,000	100%	0%	
		Western Hills Viaduct – Plan Development <sup>2</sup>	5	221,920	\$500,000	100%	0%	
		County Bridge Maintenance Contract	Various	Various	\$300,000	100%	0%	
		TOTAL			\$1,000,000			\$1,680,000
2010								
\$1,680,000	\$1,000,000	Bridge Inspection and Program Management	N/A	N/A	\$100,000	100%	0%	
	MRF	TROD Bridge Work	Various	Various	\$100,000	100%	0%	
		Western Hills Viaduct – Plan Development <sup>2</sup>	5	221,920	\$500,000	100%	0%	
		Anthony Wayne Avenue Bridge – Painting	8	6,452	\$300,000	100%	0%	
		County Bridge Maintenance Contract	Various	Various	\$200,000	100%	0%	
		TOTAL			\$1,200,000			\$1,480,000
2011								
\$1,480,000	\$1,000,000	Bridge Inspection and Program Management	N/A	N/A	\$100,000	100%	0%	
	MRF	TROD Bridge Work	Various	Various	\$100,000	100%	0%	
		Western Hills Viaduct – Plan Development <sup>2</sup>	5	221,920	\$500,000	100%	0%	
		North Bend Road over Kirby – Deck Overlay	6	6,776	\$500,000	100%	0%	
		Glenway Br. Removal (ODOT Project)	7	9,407	\$0	0%	100%	
		TOTAL			\$1,200,000			\$1,280,000
2012								
\$1,280,000	\$1,000,000	Bridge Inspection and Program Management	N/A	N/A	\$100,000	100%	0%	
	MRF	TROD Bridge Work	Various	Various	\$100,000	100%	0%	
		Western Hills Viaduct – Plan Development <sup>2</sup>	5	221,920	\$500,000	100%	0%	
		East Fork Bridge over LDC – SS Replacement	6	1,512	\$500,000	100%	0%	
		Underwater Inspections	Various	Various	\$30,000	100%	0%	
		6 <sup>th</sup> Street Expressway Bridges (ODOT Project)	Various	Various	\$0	0%	100%	
		Mont. Rd Arch o/ SORTA (ODOT Project)	5	2,390	\$0	0%	100%	
		TOTAL			\$1,230,000			\$1,050,000

Projects that will be moved in if leveraged funding can be secured or if additional funds become available.	Clifton Avenue Bridge – Superstructure Replacement <sup>1</sup>	5	6,250	\$1,500,000	?	?	
	Kennedy Avenue Bridge – Replacement <sup>1</sup>	4	9,723	\$1,500,000	?	?	
	Marburg Avenue Bridge – Replacement <sup>1</sup>	4	6,156	\$1,500,000	?	?	
	Center Hill Avenue Bridge – Replacement <sup>1</sup>	5	5,775	\$1,750,000	?	?	

- <sup>1</sup> Additional leveraged funding will be pursued and will be used to supplement local funds as secured. Only those leveraged funds actually secured at the present time are listed and are being used for budgeting purposes. Unless leveraged funds are secured or additional funds are supplied by Hamilton County, the Kennedy Avenue Bridge Replacement project, the Clifton Avenue Bridge Superstructure Replacement project, the Marburg Avenue Bridge Replacement project, and the Center Hill Avenue Bridge Replacement project will not be able to go to construction.
- <sup>2</sup> Rehabilitation/replacement of the Western Hills Viaduct is preliminarily planned after 2011 (following Waldvogel in 2010 & 2011). This will be a major project and construction is expected to exceed \$50 million. State and Federal funds will be sought, but a local match will be needed. It is expected that all design costs, which will be substantial, will need to be paid locally.
- <sup>3</sup> ODOT, OKI, and OPWC have committed \$19M to the Eighth Street Viaduct project for construction in 2007. The total project cost is estimated to be approximately \$25M. Of the needed remaining \$6M in local match, \$1.5M will be funded from City Bridge funds to replace the Burns Street Ramp, a City (DOTE) bridge adjacent to the viaduct. The remaining \$4.5M will be funded from County MRF bridge funds. All design and construction management costs will be paid locally.

The projects are grouped by the year of expected bid. This plan is flexible and will be revised as necessary if future bridge inspections reveal unexpected changes in the condition of any bridge, if anticipated bridge funding amounts change, if unexpected leveraged funding sources become available or are withdrawn, if the timing of any bridge project requires adjustment to coordinate with other infrastructure improvement or development projects, or if City Council or the City Administration redirect priorities. The estimated project costs are preliminary and are only intended to establish basic funding needs and are not considered engineer's estimates. Bridge conditions will be continually monitored during the six-year period and the plan will be adjusted as needed to best maintain the bridge infrastructure.

Some possible projects that may need to be moved forward or may need to be include in the County Bridge Maintenance Contracts include:

- 1) Galbraith Road Bridge – Deck Replacement
- 2) Hopple Street Viaduct – Deck Overlay
- 3) McMillian Street Bridge – Concrete Repairs and Sealing
- 4) River Road over Muddy Creek – Concrete Repairs and Sealing
- 5) McMillian Street Bridge – Painting Contract
- 6) Wooster Road Bridge – Painting Contract
- 7) Beechmont Avenue Bridge over Little Miami River – Bearing Realignment & Shimming
- 8) Beechmont Avenue Bridge over Little Miami River – Slope Protection Repairs
- 9) Columbia Parkway Viaduct – Drainage System Repairs
- 10) In-depth Inspection of Fracture Critical Members or other In-depth Inspections

The funds programmed for the County Bridge Maintenance Contracts may also be used, wholly or in part, to support other projects listed in the six-year plan whose expenses exceed the preliminary estimations listed in the six-year plan.